

**PATIENTS' KNOWLEDGE OF ANESTHESIA AND THE ROLE OF ANESTHESIOLOGISTS AT KABUL UNIVERSITY OF MEDICAL SCIENCES HOSPITALS****Zabiullah Ebrahimi^{1*}, Besmillah Kamal², Fariha Kamal³, Samea Husham⁴**^{1,2}Department of Anesthesia, Kabul University of Medical Sciences. Kabul, Afghanistan.³Department of Oral Medicine, Kabul University of Medical Sciences. Kabul, Afghanistan.⁴Department of Abdominal surgery, Kabul University of Medical Sciences. Kabul, Afghanistan.**Abstract**

Background: Anesthesiology, despite its critical role in surgical care, remains largely under recognized by the public. This study aims to assess the awareness and understanding of anesthesiology and anesthesiologists among patients at Kabul University of medical sciences hospitals.

Materials and methods: A cross-sectional survey was conducted from January to September 2023 involving 406 patients aged 18 and above, scheduled for elective surgery. A self-administered multiple-choice questionnaire was utilized to evaluate participants' knowledge of anesthesiology and their perceptions of anesthesiologists. The questionnaire was translated into Dari and underwent rigorous validation.

Results: The study revealed that 70.7% of participants had never heard of anesthesiology as a specialty. A significant correlation was found between participants' education levels and their knowledge of anesthesiology ($p < 0.001$). While 54.2% had prior surgery experience, only 25.1% identified anesthesiologists as the providers of anesthesia. Concerns about anesthesia were prevalent, with 23.4% expressing fears primarily related to pain. Trust in anesthesiologists was high, with 67.5% affirming their trust, yet a substantial knowledge gap regarding the anesthesiologist's role was

Conclusion: This study highlights a critical need for enhanced public education about anesthesiology and the roles of anesthesiologists. Improving patient awareness can foster better communication, address fears, and ultimately enhance patient trust and satisfaction in surgical care. Active engagement of anesthesiologists with patients before and after procedures is essential to bridge this knowledge gap.

Keywords: Anesthesia knowledge, Anesthesiologists, public awareness, perception

Introduction

Anesthesiology is a medical specialty that induces anesthesia, which involves temporary loss of consciousness, pain relief, muscle relaxation, and reduced stress during surgery [1, 2]. The fields of anesthesiology and intensive care were born out of necessity as a service to surgery, but they also gained significant external growth with the development of intensive care units (ICUs) and the requirement for both acute and long-term pain management [3]. Over decades, anesthesia has continued to be seen as a "behind-the-scenes" specialty. The public still lacks knowledge about anesthesiologists, their wide variety of responsibilities, and the critical role they play in the healthcare delivery system, despite advancements in the field of anesthesia [4-6].

Surveys from around the globe reveal that two out of three patients acknowledge anesthetists as competent healthcare professionals who work independently. However, this also implies that patients in developing countries tend to have a poorer understanding of anesthesiologists compared to those in developed nations. Contributing factors include lower levels of education and limited access to information through media and the internet [7-10]. Many people see anesthesiologists simply as assistants to surgeons, focusing solely on administering anesthesia and overseeing recovery. There is also a widespread lack of awareness about the comprehensive medical care they provide, including the diagnosis and management of potential medical issues or complications that may arise during surgery [11]. One reason for this lack of awareness may be that anesthetists have less interaction with conscious patients compared to other medical professionals. Additionally, even among healthcare workers and

academic clinical staff, there is often limited knowledge about the role of anesthesiologists both in and out of the operating room [12]. Thus, it is essential for anesthesiologists to build relationships with patients both prior to and during surgery. The process of anesthesia care includes three distinct phases: pre-anesthesia evaluation, peri-procedural management, and post-anesthesia care, each of which presents its own communication challenges [13].

Moreover, increasing awareness of anesthesia is important, as understanding the role of the physician responsible for patient care is crucial. This study aims

to assess public knowledge and awareness of anesthesiology and the role of anesthesiologists among patients seeking treatment at KUMS Teaching Hospital, Kabul, Afghanistan.

Methods

This cross-sectional study was conducted at Kabul University of Medical Sciences (KUMS) Hospitals between January 2023 and September 2023, to determine awareness of anesthesiology and the role of anesthesiologists among patients aged 18 and above scheduled for elective surgery at KUMS Hospitals (Aliabad, Thoracic, and cardiovascular institute, Maiwand, Shahara Hospital). This study self-administered multiple-choice questionnaire was adapted from a pretested version that was utilized in similar investigations [12-14]. The questionnaire was translated into the local language, Dari, to guarantee linguistic relevance. It was then back-translated, and three members of the study team evaluated it for

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appropriateness and accuracy. The survey comprised 23 relevant questions, specifically divided into demographics that encompassed details regarding participants' age (which were divided into 4 age categories, namely 18-28, 29-39, 40-50, and above 50), gender, educational attainment, work status, and different surgery departments. Eight items in the second section of the questionnaire tested participants' knowledge of anesthesia and associated topics. The final section of the survey consisted of ten items designed to gauge participants' opinions regarding anesthesiologists.

Afghanistan's Kabul University of Medical Sciences (KUMS 1401/01/21/ 375) approved the study. We certify that the study adheres to the Declaration of Helsinki's ethical guidelines. A straightforward random sampling procedure was employed to choose study participants in order to minimize bias and provide each respondent with an equal opportunity to take part in the investigation. The research team provided a printed questionnaire to each participant, asking them to choose only one correct answer. Written informed consent was obtained from participants who filled out the self-administered surveys, ensuring them that their participation was both voluntary and anonymous. For those who could not read or write, the data collectors offered assistance in completing the survey. Data were gathered by two trained collectors. The completed questionnaires were then reviewed by the research team for accuracy and completeness. Descriptive statistics were utilized to determine the proportion of responses from each participant. Variables were presented as

Table 1: Socio-demographic Characteristics of the Respondents about Knowledge of Anesthesia (n=406)

Variables	Frequency (%)	P-value
Age range		0.610
18-28	114 (28.1)	
29-39	74 (18.2)	
40-50	86 (21.2)	
>50	132 (32.5)	
Gender		0.351
Male	219 (53.9)	
Female	187 (46.1)	
Education level		0.000
Illiterate	235 (57.9)	
Basic	79 (19.5)	
Secondary	62 (15.3)	
Tertiary	30 (7.4)	
Occupation		0.045
Unemployed	308 (75.9)	
Government employee	91 (22.4)	
Self-employed	7 (1.7)	
Surgical Specialty		0.880
General Surgery	123 (30.2)	
Urology	82 (20.2)	
Neurosurgery	27 (6.7)	
Orthopedic surgery	20 (4.9)	
Abdominal surgery	98 (24.1)	
Obstetrics and Gynecology		
ENT	17 (4.2)	
Plastic surgery	18 (4.4)	
Cardiothoracic surgery	8 (2)	
	13 (3.2)	

A substantial majority of participants (70.7 %) reported that they had never heard about anesthesia as a specialty, while only 29.6% confirmed they were aware of it. Notably, there was a significant relationship between education level and occupation ($p=0.000$, $P=0.045$) respectively, but other demographics did not show any significance, as indicated by high p-values. Regarding personal experiences with surgery or anesthesia, 54.2% of participants reported having undergone previous surgery or anesthesia, whereas 45.8% had not. Additionally, when inquiring if every type of surgery requires anesthesia, 53.9% believed it does, while 46.1% disagreed.

numbers and percentages, while Chi-square tests were utilized to explore associations between knowledge of anesthesia as a specialty and socio-demographic variables such as age, gender, education level, occupation, as well as different surgical departments. A p-value of < 0.05 was considered statistically significant and, data analysis was conducted with SPSS Statistics version 25 (IBM Corp., Armonk, NY, USA).

Results

This cross-sectional study included 406 participants, achieving a response rate of 100%. Among them, 219 (53.9%) were male and 187 (46.1%) were female, indicating a notable male predominance across various age groups, with a male-to-female ratio of 1.17:1. In terms of age, 132 participants (32.5%) were over 50 years old, 114 (28.1%) were aged 18 to 28, 86 (21.2%) fell within the 40 to 50 age range, and 74 (18.2%) were between 29 and 39 years old. Regarding education, 235 participants (57.9%) were illiterate, 79 (19.5%) had completed elementary school and could read and write, 62 (15.3%) had graduated from high school, and around 30 (7.5%) had higher education. Regarding occupation, 75.9% of participants were unemployed, 22.4% were government employees, and only 1.7% were self-employed. Most participants came from the general surgery unit 123 (30.2%). (Table, 1) provides an overview of the demographic characteristics of the patients.

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Concerns about anesthesia were also a focal point of the survey. Only 23.4% of respondents expressed fear about anesthesia, with 76.6% indicating they had no such worries. For those who did have concerns, the predominant reason cited was a fear of pain (66.3%), followed by fears of not waking up (11.1%) and waking up during surgery (4.7%). Notably, 18% of respondents indicated they didn't know the reason for their concerns.

When it came to the types of anesthesia, 23.4% of participants acknowledged the existence of different types, and in terms of preferences, 36.5% preferred general anesthesia. Finally, participants were asked which

type of anesthesia they believed provided better post-operative pain relief. Here, 25.1% selected general anesthesia, while 24.1% favored spinal or epidural anesthesia. However, a substantial 50.7% did not have a definitive answer, indicating uncertainty in this area. Overall, the survey highlights a

notable gap in awareness and understanding of anesthesia as a specialty and its various forms among the study population. (Table, 2) provides an overview of the questions related to knowledge of anesthesia.

Table 2: Knowledge related to anesthesia

Question	Answer	Frequency (%)
Q1. Have you ever heard about anesthesia as a specialty?	Yes	120 (29.6)
	No	286 (70.7)
Q2. Have you ever had any previous surgery/anesthesia?	Yes	220 (54.2)
	No	186 (45.8)
Q3. Does every type of surgery require anesthesia?	Yes	219 (53.9)
	No	187 (46.1)
Q4. Do you fear or have concerns about anesthesia?	Yes	95 (23.4)
	No	311 (76.6)
Q5. What is the reason of your concern regarding anesthesia?	Fear of not waking up	45 (11.1)
	Fear of waking up in the middle of surgery	19 (4.7)
	Fear of pain	269 (66.3)
	I don't know	73 (18)
Q6. Are there different types of anesthesia?	Yes	95 (23.4)
	No	61 (15)
	I don't know	250 (61.6)
Q7. Which type of anesthesia do you prefer?	General anesthesia	148 (36.5)
	Spinal/Epidural anesthesia	105 (25.9)
	Local anesthesia	57 (14)
	I don't know	96 (23.6)
Q8. Which type of anesthesia provides better post-operative pain relief?	General anesthesia	102 (25.1)
	Spinal/Epidural anesthesia	98 (24.1)
	I don't know	206 (50.7)

When queried about who administers their anesthesia, a substantial majority (59.9%) reported that they did not know, while 25.1% identified an anesthesiologist as the provider, 12.3% believed it was the surgeon, and only 2.7% thought it was a nurse. Regarding the qualifications of anesthesiologists, 57.6% affirmed that an anesthesiologist is a qualified doctor, while 5.9% disagreed, and 36.5% were unsure. This indicates a significant gap in knowledge about who is responsible for administering anesthesia.

Participants were also asked who primarily ensures their well-being during surgery. Here, responses were split, with 18.5% choosing the surgeon, 17.7% selecting the anesthesiologist, and 52.5% expressing uncertainty. Similarly, for questions about recovery safety, 31.8% believed the nurse was responsible, while 46.8% did not know. When asked about the areas where anesthesiologists play a major role, and regarding the most important task of an anesthesiologist during surgery, a significant 75.1%, and 44.6% of participants were uncertain respectively.

Table 3: Knowledge related to anesthesiologist.

Question	Answer	Frequency (%)
Q1. Who administers your anesthesia?	Anesthesiologist	102 (25.1)
	Surgeon	50 (12.3)
	Nurse	11 (2.7)
	I don't know	243 (59.9)
Q2. Is an anesthesiologist a qualified doctor?	Yes	234 (57.6)
	No	24 (5.9)
	I don't know	148 (36.5)
Q3. Who primarily ensures your well-being during surgery?	Anesthesiologist	72 (17.7)
	Surgeon	75 (18.5)
	Nurse	37 (9.1)
	Technician	9 (2.2)
	I don't know	213 (52.5)
	Nurse	129 (31.8)
Q4. Who is responsible for ensuring your recovery in safety?	Nurse supervised by an anesthesiologist	38 (9.4)
	Nurse supervised by the surgeon	49 (12.1)
	I don't know	190 (46.8)
Q5. In what other areas of hospital does an anesthesiologist play a major role?	Intensive care units	7 (1.7)
	Cardiac care unit	98 (24.1)
	Radiology	4 (1)

	Emergency	59 (14.5)
	I don't know	305 (75.1)
	Maintaining vital signs	92 (22.7)
	Pain control	88 (21.7)
	Keeping the patient asleep	30 (7.4)
	Applying medications	15 (3.7)
	I don't know	181 (44.6)
	4 years	70 (17.2)
	10 years	20 (4.9)
	14 years	53 (13.1)
	I don't know	263 (64.8)
	Yes	147 (36.2)
	No	44 (10.8)
	I don't know	215 (53)
	Yes	270 (66.5)
	No	6 (1.5)
	I don't know	130 (32)
	Yes	274 (67.5)
	No	7 (1.7)
	I don't know	124 (30.5)

The survey also revealed a lack of awareness about the training required for anesthesiologists, with 64.8% of respondents stating they did not know how many years of training are necessary.

When asked if anesthesiologists stay with patients throughout surgery, 53% were unsure, while 36.2% believed they do. Interestingly, a significant majority of respondents (66.5%) expressed a desire to be visited by their anesthesiologist before surgery, with only 1.5% preferring not to be visited. Trust in anesthesiologists was also notably high, with 67.5% of participants affirming their trust, compared to only 1.7% who did not. Overall, the survey highlights both a significant level of trust in anesthesiologists and a critical need for improved awareness and education regarding their roles and responsibilities. (Table, 3) provides questions and answers associated with knowledge about anesthesiologists.

Discussion

To our knowledge, this is the first hospital-based survey designed to assess public awareness of anesthesiology and the role of anesthesiologists. The goal is to gain insights into how this knowledge can be improved, as it is essential for patients to understand the responsibilities of the doctor managing their care. The study revealed a widespread lack of awareness about anesthesia among the participants. A comparable study found that 71.7% of participants had insufficient information about anesthesia which is consistent with the findings of this study, which found that approximately 70.7% of patients were not aware of the likelihood of anesthesia as a specialty[12]. Similar research conducted in India found that just 58% of respondents had heard of anesthesia and only 38% knew why it was used [15]. Nonetheless, Turkish survey authors discovered that people with a history of anesthesia knew more about anesthesia [16]. We discovered a statistically significant correlation between participants' educational background, occupation, and knowledge level. This is in contrast to a cross-sectional study conducted in Nigeria that found no relationship between the study population's degree of anesthesia knowledge and education [17]. Even though many Caribbean nations have high literacy rates, another study found that many patients are unaware of the specifics of anesthetic care [18]. It is imperative that anesthesiologists teach and educate patients about their specialty and tasks during preoperative and postoperative visits since these data suggest that there is still a need for additional information regarding anesthesia in general.

In current study, 59.9% of respondents were unaware that a doctor who specializes in anesthesia is in charge of anesthesia during surgery. Surveys on anesthesia awareness and knowledge of anesthesiologists' roles revealed that the vast majority of respondents were uninformed of the role of anesthesia and anesthesiologists both inside and outside of the operating room [19, 20]. Furthermore, according to the detailed results of our study, even respondents who were aware that anesthesiologists are qualified doctors had very little knowledge of their actual roles and responsibilities

during anesthesia, which was lower than that found in other surveys [1, 21, and 22]. The study also revealed a lack of knowledge about the education required for anesthesiologists, as 64.8% of participants said they were uncertain about the length of time needed to become a specialist in this field. Similar findings were revealed in different studies which showed a notable lack of knowledge regarding the specific training requirements for these medical professionals [23, 24].

Concerns about anesthesia are prevalent among patients, often surpassing anxiety related to the surgical procedure itself. In this study, while a majority (76.6%) of respondents reported no fear of anesthesia, the 23.4% who did express fear highlighted specific concerns, primarily related to pain and awareness during surgery. These findings are in line with a study where patients were particularly worried about experiencing pain during the procedure, influencing their anxiety about anesthesia [25]. In another study, the most significant concern reported by patients was the fear of death associated with undergoing general anesthesia [26]. Many patients underestimate the training and expertise of anesthesiologists, which can exacerbate their fears; however, counseling sessions that address these fears can significantly reduce anxiety levels, allowing patients to feel more comfortable and secure about their upcoming procedures [27]. Overall, improving patient education and communication can significantly enhance trust in anesthesiologists and the anesthesia process. However, the current research faced several limitations, including a small sample size and the geographical restriction of participants, as it solely involved patients from KUMS Hospitals. The low literacy level of participants, their understanding, and responses to the questionnaire might have been affected, which could limit the accuracy of the result. Nonetheless, this study serves as a foundation for future, more extensive research efforts. Another limitation is the reliance on self-reported data, which may impact accuracy. Furthermore, the study might not have considered other factors that could influence individuals' understanding or familiarity with anesthesia, as it concentrated mainly on a narrow range of variables.

Conclusion

In conclusion, this survey highlights a significant gap in public awareness of anaesthesiology and the vital role anaesthesiologists play in patient care. Many participants lacked an understanding of the specialty, emphasizing the need for improved education and communication. By actively engaging with patients before and after procedures, anaesthesiologists can address fears and misconceptions, promoting trust and enhancing comfort. Ultimately, prioritizing patient education will lead to more positive experiences and outcomes in surgical settings.

Ethics approval and consent to participate

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval for this study was obtained from the Institutional Review Board (IRB) of Kabul University of Medical Sciences (IRB No 375, 1401/01/21 according to 10/04/2022).

Written informed consent was obtained from all participants prior to their inclusion in the study, and assistance was provided to ensure comprehension and accurate responses.

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References

1. Lee JJ, Lee NH, Park CM, et al. Public awareness about the specialty of anaesthesiology and the role of anaesthesiologists: a national survey. *Korean J Anesthesiol*. 2014;66:12-7. doi: 10.4097/kjae.2014.66.1.12.
2. Budiman M, Izaham A, Abdul Manap N, Zainudin K, Kamaruzaman E, Masdar A, Dan A. The patients' understanding on the status and role of anaesthesiologists. *Clin Ter*. 2015;166:227-35. doi: 10.7417/CT.2015.1892.
3. Onutu AH, Rus C, Acalovschi I. The public perception of the anaesthesiologist in Romania: a survey. *Rom J Anaesth Intensive Care*. 2017;24(1):21-28. doi: 10.21454/rjaic.7518.241.onu. PMID: 28913494; PMCID: PMC5555423.
4. Nagrampa D, Bazargan-Hejazi S, Neelakanta G, Mojtabahedzadeh M, Law A, Miller M. A survey of anaesthesiologists' role, trust in anaesthesiologists, and knowledge and fears about anesthesia among predominantly Hispanic patients from an inner-city county preoperative anesthesia clinic. *J Clin Anesth*. 2015;27:97-104. doi: 10.1016/j.jclinane.2014.05.012.
5. Swinhoe CF, Groves ER. Patients' knowledge of anaesthetic practice and the role of anaesthetists. *Anaesthesia*. 1994;49:165-6. doi: 10.1111/j.1365-2044.1994.tb03380.x.
6. Braun AR, Leslie K, Morgan C, Bugler S. Patients' knowledge of the qualifications and roles of anaesthetists. *Anaesth Intensive Care*. 2007;35:570-4. doi: 10.1177/0310057X0703500417.
7. Djagbletey R, Aryee G, Essuman R, Ganu V, Darkwa EO, Owoo C, et al. Patients' knowledge and perception of anaesthesia and the anaesthetist at a tertiary health care facility in Ghana. *South Afr J Anaesth Analg*. 2017;23(1):11-16.
8. Eyelade OR, Akinyemi J, Adewole I. Patients' perception and knowledge of anaesthesia and anaesthetists—a questionnaire survey. *South Afr J Anaesth Analg*. 2010;16(4):28-31.
9. Singh T, Sharma S, Banerjee B, Garg S. Knowledge regarding anaesthesiologist and anaesthesiology among patients and attendants attending a rural hospital of New Delhi. *J Educ Health Promot*. 2018;7(1):12.
10. Singh P, Kumar A, Trikha A. Rural perspective about anaesthesia and anaesthesiologist: a cross-sectional study. *J Anaesthesiol Clin Pharmacol*. 2013;29(2):228.
11. Ma Y, Mi T, Sun M, Zhang C, Chang D, Liu S, et al. Public Knowledge and Awareness of Anaesthesiology and Anesthesiologists in China: A Cross-Sectional National Survey of 1 Million Participants. *Anesth Analg*. 2024;138(4):829-38. doi: 10.1213/ANE.0000000000006478. Epub 2023 May 5. PMID: 37144921.
12. Arefayne NR, Getahun AB, Melkie TB, Endalew NS, Nigatu YA. Patients' knowledge and perception of anesthesia and the anesthetists: Cross-sectional study. *Ann Med Surg (Lond)*. 2022;78:103740. doi: 10.1016/j.amsu.2022.103740. PMID: 35600197; PMCID: PMC9118471.
13. Leite F, Silva LM, Biancolin SE, Dias A, Castiglia YM. Patient perceptions about anesthesia and anesthesiologists before and after surgical procedures. *Sao Paulo Med J*. 2011; 129:224-229. 10.1590/s1516-31802011000400005
14. Geddawy MA, Alkaydees SS, Almadhi M, Alashqar SA, Alghelfes AI, Aljabaan B. Public Awareness and Knowledge About Anesthesiology and the Role of Anesthesiologists in Al-Qassim Province, Saudi Arabia. *Cureus*. 2023 Feb 14;15(2):e34985. doi: 10.7759/cureus.34985. PMID: 36938292; PMCID: PMC10019832.
15. Minakshi, Rajput., Dewendra, J., Gajbhiye., Nagesh, Venkata, Ivaturi., Shambhavi, Rajiva., Vivek, Yadav. Knowledge and Awareness about Anesthesia and Perception about Anesthesiologists and their Role during the COVID-19 Pandemic among Patients at a Zonal Hospital: A Cross-sectional Survey. *Journal of Marine Medical Society*, (2024). doi: 10.4103/jmms.jmms_58_24
16. A. Sagün, H. Birbiçer, G. Yapıcı, Patients', who applied to the anesthesia clinic, perceptions and knowledge about anesthesia in Türkiye, Saudi J. Anaesth. 7 (2) (2013) 170.
17. O.A. Ige, O.O. Oyedepo, B.O. Bolaji, A.M. Adewunmi, O.O. Abe, Perception OF anaesthesia and the anaesthetist among adult surgical patients IN a tertiary facility IN Nigeria, Sierra Leone. *J. Biomed. Res.* 8 (1) (2016) 12–18.
18. S. Hariharan, L. Merritt-Charles, D. Chen, Patient perception of the role of anaesthesiologists: a perspective from the Caribbean, *J. Clin. Anesth.* 18 (7) (2006) 504–509.
19. Uma BR, Hanji AS: "Anaesthesia and anaesthesiologists: how famous are we among the general population?"- a survey. *J Clin Diagn Res*. 2013, 7:2898-900. 10.7860/JCDR/2013/7084.3788
20. Marulasiddappa V, Nethra HN. A Survey on Awareness about the Role of Anesthesia and Anesthesiologists among the Patients Undergoing Surgeries in a Tertiary Care Teaching Women and Children Hospital. *Anesth Essays Res*. 2017 Jan-Mar;11(1):144-150. doi: 10.4103/0259-1162.186595. PMID: 28298774; PMCID: PMC5341661.

21. Chew ST, Tan T, Tan SS, Ip-Yam PC. A survey of patients' knowledge of anaesthesia and perioperative care. *Singapore Med J* 1998; 39: 399-402.

22. van Wijk MG, Smalhout B. A postoperative analysis of the patient's view of anaesthesia in a Netherlands' teaching hospital. *Anaesthesia* 1990; 45: 679-82.

23. Almutairi NG, Alorainy MH, Aldayel AM, Alotaibi HA, Alkathami SA, Alghamdi WA. Public Knowledge and Perception of Anesthesia, Anesthesiologists' Expertise, and Their Role Among Saudi Citizens Residing in Saudi Arabia. *Cureus*. 2023;15(8):e44265. doi: 10.7759/cureus.44265. PMID: 37772216; PMCID: PMC10527665.

24. Irwin MG, Fung SK, Tivey S. Patients' knowledge of and attitudes towards anaesthesia and anaesthetists in Hong Kong. *Hong Kong Med J*. 1998 Mar;4(1):16-22. PMID: 11832547.

25. Zaid, Al, Modanat., Lou'i, Al-Husinat., Bashar, M., Mistarihi., Mohammad, Tashtoush., Jood, Alsarabi., Rama, M., Matalqah., Hassan, Mistarihi., Mohammad, Wasfi, Amir., Naval, Debajah., Esra'a, Rejoub., Raneem, Bereshy., Mustafa, Tawaha., Rana, Talj., Giustino, Varrassi. The Delicate Dance of Intraoperative Anesthesia: Addressing Patient and Anesthesiologist Concerns. *Cureus*, (2024);16 doi: 10.7759/cureus.54746

26. Chandra, Shekhar, Mishra, Sushant, Saxena, Anuj, Dubey. Anesthesia-patient's apprehension, concerns, and counseling. *The Journal of medical research*, (2020);8(4):302-306. doi:10.17511/IJMRR.2020.I04.03

27. Esraa, A, Roublah., Rewaa, N, Alqurashi., Morouj, A, Kandil., Sarah, H, Neama., Fawzia, Abdulrahman, Roublah., Abeer, A, Arab., Abdulaziz, Boker. Patients' concerns and perceptions of anesthesia-associated risks at University Hospital: A cross-sectional study. *Saudi Journal of Anaesthesia*, (2020);14(2):157-163. doi: 10.4103/SJA.SJA_560_19

